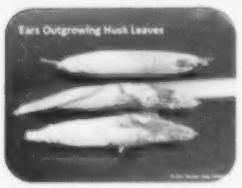

CropPest Ontario

Agriculture Development Branch
Editor—Albert Tenuta– Field Crop Pathologist
www.omafra.gov.on.ca/croppest

ISSN 1203-2204 VOLUME NO. 17 ISSUE NO. 08 August 23 2012

"IN THIS ISSUE"

- Stink Bugs in Soybeans
- 2012 Ontario Winter Wheat Performance Trials
- Short Husks & Exposed Ears

Stink Bugs in Soybean

Tom Cowan, Entomologist, OMAFRA, Ridgetown

Stink bugs have been showing up in soybean fields in south western Ontario in noticeable numbers over the past 2 weeks and reports of stink bug numbers from Ohio are showing a similar trend. We may see more stink bug in the soybean crop this year then in previous years so it's time to be on the look out for them. Remember, only IP and seed beans are seriously affected by stink bug feeding as damage caused to the seed affects seed quality.

The two main stink bugs that are pests in soybeans are the green stink bug (Nezara viridula) and the brown stink bug (Euschistus servus). At the R5 to mid R6 stage, both adult and nymphs cause damage by piercing and injecting digestive enzymes into the seed causing the seed to dimple or shrivel. There are often no obvious feeding scars on the outside of the pod making damage difficult to asses. Once soybeans reach the late R6 stage then danger from stink bug feeding has passed.

..../2

Comments, suggestions or articles are welcome. To be added to the distribution list please contact:

Albert Tenuta or Mirjam Hall
Phone 519-674-1690
Fax 519-674-1564
albert.tenuta@ontario.ca or mirjam.hall@ontario.ca

PIONEER A DuPont Company
Hyland Seeds BUILDING
NK syngenta
Bayer CropSCience
FS
MONSANTO im ine
BASF The Chemical Company

Ministry of Agriculture, Food and Rural Affairs
Ontario

Scouting Techniques: Use the drop-cloth technique in row plantings, and the sweep-net technique for narrow row and drilled beans. The drop-cloth method involves using a 90 cm (36 in.) long piece of white cloth positioned on the ground between two rows of soybeans. Vigorously shake the plants over the cloth in each of the two rows. Count the number of adults and nymphs and divide the number by 6 to obtain the average number of stink bugs in a 30-cm (1-ft.) row. Repeat this in at least four more areas of the field. Be careful not to disturb the plants prior to shaking them on the cloth.

Using a 38-cm (15-in.) diameter sweep net, take 20 sweep samples (in a 180°-arc sweep) in five areas of the field. Determine the average number of adults and nymphs per sweep by dividing the total count by 100.

Action Threshold: Control may be warranted in IP food grade and seed soybeans if an average of one stink bug per 30 cm (1 ft) of row or 0.2 bugs per sweep is found during the late R5-R6 stages.

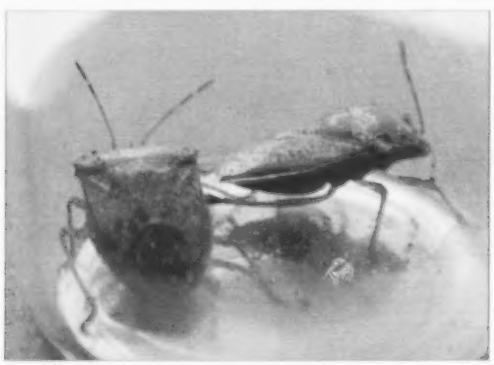

Figure 1. Brown stink bug

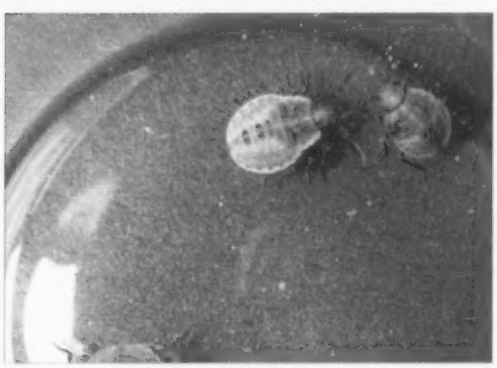

Figure 2. Green stink bug nymph

OMAFRA Field Crop Staff Working for You!

Dawn Pate	Manager—Field Crops	519-826-3257
Joel Bagg	Forage Specialist	705-324-5856
Scott Banks	Emerging Crops Specialist	613-258-8359
Tom Cowan	Entomology, Field Crops Program Lead (A)	519-674-1696
Horst Bohner	Soybean Specialist	519-271-5858
Christine Brown	Nutrient Management Field Crop Program Lead	519-537-8305
Mike Cowbrough	Weed Management Field Crops Program Lead	519-824-4120 ext 52580
Brian Hall	Edible Beans & Canola Specialist	519-271-0083
Peter Johnson	Cereals Specialist	519-271-8180
Adam Hayes	Soil Management Specialist—Field Crops	519-674-1621
Ian McDonald	Applied Research Coordinator-Field Crops	519-824-4120 ext 56707
Gilles Quesnel	IPM Program Lead-Field Crops (Bilingual)	613-258-8250
Greg Stewart	Corn Industry Program Lead	519-824-4120 ext 54865
Albert Tenuta	Pathologist – Field Crops Program Lead	519-674-1617

2012 Ontario Winter Wheat Performance Trial
For More Details, visit www.gocereals.ca

Table 1 - Ontario Performance Trial; Winter Wheat 2012 - Cumulative Yield Index[1]
Summary for Area I & II Combined[2], OCCC, August 2012
Preliminary data only - subject to change following committee approval in August.

Class[3]	Variety	5 year	4 year	3 year	2 year	2012
sww	Ava	103[4]	104	104	103	104
	E1009W (awned)	98	99	99	97	95
	E0028W	101	101	100	100	100
	25W43				100	101
	Venture				101	97
	OAC Snow					93
srw	25R47 (awned)	103	103	103	104	104
	Emmit	105	105	105	104	101
	E1007R (awned)	101	101	100	99	99
	R045	104	103	103	102	102
	Huntley (awned)	101	100	99	100	102
	PH55	103	103	103	105	102
	Branson	106	106	107	108	104
	HY 116-SRW	103	103	103	102	100
	Brooklyn	102	100	101	101	101
	25R39		107	107	108	110
	Wave		105	105	104	103
	HY 271-SRW (awned)			98	99	99
	CM614			103	103	104
	CM249 (awned)				109	109
	OAC Flight (awned)				102	100
	25R34 (awned)					109
	25R40 (awned)					110
hww	Whitebear (awned)				100	97
hrw	AC Morley	99	98	97	97	97
	Wentworth	101	101	99	97	96
	Princeton	98	97	97	97	99
	Keldin (awned)		98	100	102	105
	Priesley			106	105	104
	AC Sampson				94	95
Means (t/ha)		5.73	5.61	5.66	5.70	5.48
Means (bu/ac)		85.3	83.5	84.1	84.7	81.5
Locations		34	27	20	13	7

[1] Values differing by less than 3 within a column may not represent true differences in yield. Yield Indices are Heritability Adjusted Relative Values (HARV), which favour results from trial locations with high repeatability. For more information, see: Yan, W. Use of HARV in Variety Trial Summaries.

[2] Area I & II Combined = 2500 Crop Heat Units or more, West of Frontenac County.

[3] sww = soft white winter, srw = soft red winter, hww = hard white winter, hrw = hard red winter.

[4] Cultivar yield rankings may vary from year to year. Decisions are therefore best made using data with the greatest number of years.

Table 2 - Ontario Performance Trial; Winter Wheat 2012 Cumulative Yield Index[1]
Summary for Area I[2], OCCC, August 2012
Preliminary data only - subject to change following committee approval in August.

Class[3]	Variety	5 year	4 year	3 year	2 year	2012
sww	AC Mackinnon	100[4]	99	100	97	97
	Ava	102	103	104	104	102
	E1009W (awned)	98	99	99	96	93
	E0028W	101	102	101	100	97
	25W43				98	101
	Venture				101	96
	OAC Snow					98
srw	25R47 (awned)	107	107	109	108	109
	Emmit	102	103	104	103	100
	E1007R (awned)	101	101	100	99	95
	R045	105	104	104	101	99
	Huntley (awned)	102	101	100	100	106
	PH55	102	102	102	104	104
	Branson	103	103	103	107	106
	HY 116-SRW	100	100	99	101	96
	Brooklyn	104	101	101	100	100
	25R39		110	111	111	117
	Wave		106	106	108	112
	HY 271-SRW (awned)			97	98	100
	CM614			106	107	107
	CM249 (awned)				110	113
	OAC Flight (awned)				102	99
	25R34 (awned)					117
	25R40 (awned)					117
hww	Whitebear (awned)				94	90
hrw	AC Morley	98	98	98	99	97
	Wentworth	101	100	98	96	94
	Princeton	99	96	95	93	93
	Keldin (awned)		99	99	99	101
	Priesley			105	104	104
	AC Sampson				92	91
Means (t/ha)		5.76	5.66	5.50	5.29	4.67
Means (bu/ac)		85.6	84.2	81.8	78.6	69.4
Locations		15	12	9	6	3

[1] Values differing by less than 3 within a column may not represent true differences in yield. Yield Indices are Heritability Adjusted Relative Values (HARV), which favour results from trial locations with high repeatability. For more information, see: Yan, W. Use of HARV in Variety Trial Summaries.

[2] Area I = 3100 Crop Heat Units or more.

[3] sww = soft white winter, srw = soft red winter, hww = hard white winter, hrw = hard red winter.

[4] Cultivar yield rankings may vary from year to year. Decisions are therefore best made using data with the greatest number of years.

2012 Ontario Winter Wheat Performance Trial ....continued

Table 3 - Ontario Performance Trial; Winter Wheat 2012 Cumulative Yield Index[1]
Summary for Area II[2], OCCC, August 2012

Preliminary data only – subject to change following committee approval in August.

Class[3]	Variety	5 year	4 year	3 year	2 year	2012
sww	Ava	104[4]	105	105	103	105
	E1009W (awned)	98	99	99	97	98
	E0028W	100	101	100	99	102
	25W43				102	100
	Venture				101	98
	OAC Snow					89
srw	25R47 (awned)	100	99	98	100	101
	Emmit	107	106	106	105	103
	E1007R (awned)	101	101	100	99	103
	R045	103	102	101	103	104
	Huntley (awned)	99	99	99	99	99
	PH55	105	105	104	106	101
	Branson	109	109	111	109	104
	HY 116-SRW	106	104	105	102	103
	Brooklyn	100	99	101	101	101
	25R39		105	105	106	105
	Wave		104	104	100	97
	HY 271-SRW (awned)			99	100	98
	CM614			101	100	102
	CM249 (awned)				107	107
	OAC Flight (awned)				103	101
	25R34 (awned)					103
	25R40 (awned)					104
hww	Whitebear (awned)				105	102
hrw	AC Morley	99	98	95	95	96
	AC Sampson	100	99	98	96	97
	Wentworth	101	101	101	98	97
	Princeton	98	98	98	100	103
	Keldin (awned)		98	100	104	109
	Priesley			108	106	104
Means (t/ha)		5.72	5.58	5.79	6.05	6.10
Means (bu/ac)		85.0	82.9	86.1	90.0	90.8
Locations		19	15	11	7	4

[1] Values differing by less than 3 within a column may not represent true differences in yield. Yield Indices are Heritability Adjusted Relative Values (HARV), which favour results from trial locations with high repeatability. For more information, see: Yan, W. Use of HARV in Variety Trial Summaries.

[2] Area II = West of Frontenac County between 2500 and 3100 Crop Heat Units.

[3] sww = soft white winter, srw = soft red winter, hww = hard white winter, hrw = hard red winter.

[4] Cultivar yield rankings may vary from year to year. Decisions are therefore best made using data with the greatest number of years.

Table 4 - Ontario Performance Trial; Winter Wheat 2012 Cumulative Yield Index[1]
Summary for Area III[2], OCCC, August 2012

Preliminary data only - subject to change following committee approval in August.

Class[3]	Variety	5 year	4 year	3 year	2 year	2012
sww	Ava	106[4]	107	103	103	102
	Venture				98	98
srw	Emmit	107	107	104	106	105
	R045	99	99	101	100	101
	Branson	102	102	102	103	105
	HY 116-SRW	102	104	103	102	102
	Brooklyn	102	102	103	102	103
	HY 271-SRW (awned)			103	102	105
	CM614			103	100	100
	CM249 (awned)				100	98
	OAC Flight (awned)					105
hrw	AC Morley	95	95	94	93	90
	AC Sampson	99	100	98	98	97
	Wentworth	101	101	98	96	95
	Benefit	95	94	92	94	92
	Princeton	96	96	98	95	94
	Keldin (awned)		100	97	94	94
	Priesley					108
Means (t/ha)		5.78	6.16	6.33	6.55	6.70
Means (bu/ac)		85.9	91.7	94.1	97.5	99.7
Locations		14	11	8	5	3

[1] Values differing by less than 3 within a column may not represent true differences in yield. Yield Indices are Heritability Adjusted Relative Values (HARV), which favour results from trial locations with high repeatability. For more information, see: Yan, W. Use of HARV in Variety Trial Summaries.

[2] Area III = East of Frontenac County.

[3] sww = soft white winter, srw = soft red winter, hww = hard white winter, hrw = hard red winter.

[4] Cultivar yield rankings may vary from year to year. Decisions are therefore best made using data with the greatest number of years.

Short Husks & Exposed Ears

R. L. (Bob) Nielsen
Agronomy Dept., Purdue University

Periods of severe stress can do all sorts of strange things to crops. One oddity that has been reported by a number of folks this year is often described as "ears outgrowing their husks." The phenomenon is the result of stunted husk leaf development combined with fairly normal ear (cob) elongation.

The primary symptom is that the ears elongate beyond the end of the stunted husk leaves, resulting in exposed kernels that are subject to insects, birds, and weathering effects. Kernels damaged by these factors are subject to fungal infection and the development of ear molds. If high percentages of ears are thus affected, then overall grain quality can be compromised to the point that grain buyers may discount or "dock" their prices accordingly.

The development of stunted husk leaves and exposed ears seems to be related to combination of severe stress before or during pollination that is then relieved in the initial weeks following pollination. The most common combination of conditions that results in this oddity is severe heat and drought stress that is then relieved by cooler temperatures and rainfall.

The stunting of the husk leaves is akin to that which can occur in the whole plant when subjected to lengthy periods of heat and drought stress. The potential for husk leaf expansion and elongation seems to be permanently restricted while the ear (cob) is able to continue elongation upon relief of the stress.

While the combination of heat/drought stress relieved by cooler temperatures/rainfall seems to be the common thread among reports of ears outgrowing their husk leaves, other combinations of severe stress followed by sudden relief may also result in the stunting of husk leaves.

The photos to the right illustrate an example of stunted husk leaves from an area of a field in eastern Indiana in 2011 that was particularly drought-stricken compared to other, less stressed areas of the field. This field had also experienced severe root lodging about 10 days prior to pollination, which likely added additional stress on the developing ears for a period of time. Husk leaves of affected plants were about 2/3 the length of the ear itself and about half that of the husk leaves of the "normal" ears. Ear (cob) lengths of the "normal" and "stressed" ears were relatively similar; though kernel number and size were smaller on the "stressed" ears.

The ears below are from a field in northeast Indiana that experienced severe drought in 2012 that stunted husk leaves and cob length, but late rains were sufficient to allow the stunted ears to still elongate beyond the even more stunted husk leaves.

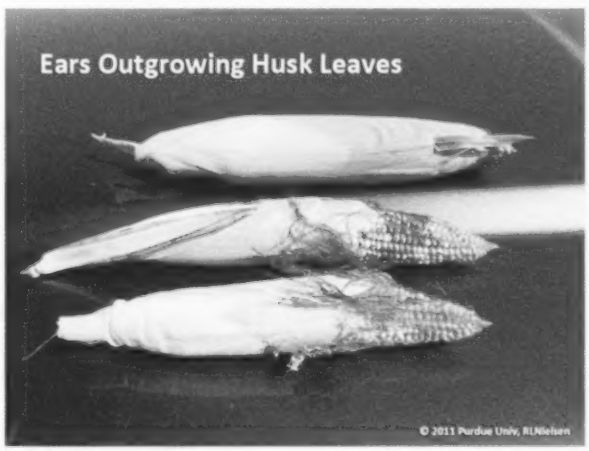

Figure 1. Comparison of normal husk coverage and ears with stunted husk leaves

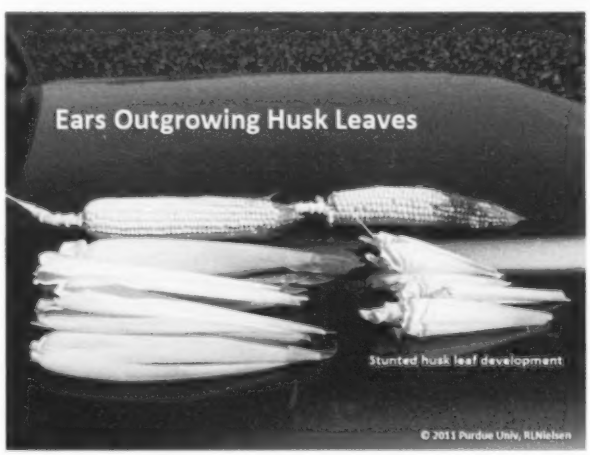

Figure 2. Comparison of husk leaf lengths with normal and stressed plant

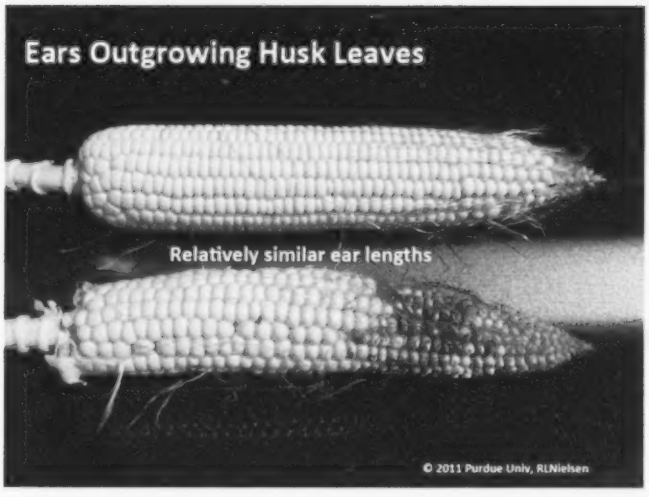

Figure 3 Comparison of ear w/ normal husk coverage and ear with stunted husk coverage

Figure 5. Ears outgrowing husk leaves. Northeast Indiana 2012

Damaged Kernels on Exposed End of Ear
Damage from insects, birds, weathering
CHAINMAN'S CONVERSION RULE
CHICAGO STEEL TAPE CO.
© 2011 Purdue Univ, RLNielsen

Figure 4. Damaged kernels on exposed end of ear.

Figure 6. Ear outgrowing husk leaves. Northeast Indiana 2012